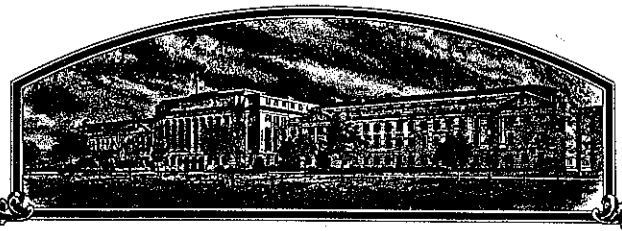
No. 8500127



# THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

## DeKalb-Pfizer Genetics

Whereas, THERE HAS BEEN PRESENTED TO THE

**Secretary of Agriculture**

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF eighteen YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

CORN

'MBNA'

In Testimony Whereof, *I have hereunto set my hand and caused the seal of the* Plant Variety Protection Office *to be affixed at the City of* Washington, D. C. *this* 30th *day of* April *in the year of our Lord one thousand nine hundred and* eighty-six.

Attest:

Kenneth A. [illegible]
Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Richard E. Lyng
Secretary of Agriculture

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK, POULTRY, GRAIN & SEED DIVISION

# APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

**INSTRUCTIONS:** *See Reverse.*

FORM APPROVED
OMB NO. 40-R3822

No certificate for plant variety protection may be issued unless a completed application form has been received (5 U.S.C. 553).

| 1a. TEMPORARY DESIGNATION OF VARIETY | 1b. VARIETY NAME | FOR OFFICIAL USE ONLY |
|---|---|---|
| MBNA | MBNA | PV NUMBER 8500127 |
| 2. KIND NAME: Corn | 3. GENUS AND SPECIES NAME: Zea Mays | FILING DATE: 4/26/85 — TIME: 3:30 ~~A.M.~~ P.M. |
| 4. FAMILY NAME (BOTANICAL): Gramineae | 5. DATE OF DETERMINATION: Summer 1980 | FEE RECEIVED: $ 1,800 / $ 200 — DATE: 4/26/85 / 3/24/86 |
| 6. NAME OF APPLICANT(S): DeKalb-Pfizer Genetics | 7. ADDRESS (*Street and No. or R.F.D. No., City, State, and ZIP Code*): 3100 Sycamore Road, DeKalb, IL 60115 | 8. TELEPHONE AREA CODE AND NUMBER: 815/756-3671 |
| 9. IF THE NAMED APPLICANT IS NOT A PERSON, FORM OF ORGANIZATION: (*Corporation, partnership, association, etc.*) General Partnership | 10. IF INCORPORATED, GIVE STATE AND DATE OF INCORPORATION | 11. DATE OF INCORPORATION |

12. NAME AND MAILING ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS: Waddell A. Biggart,Esq., Sughrue,Mion,Zinn,Macpeak&Seas,1776 K St., N.W., D.C. 20006; Eric Christophersen,Esq.,3100ScyamoreRoad,DeKalb,Illinois 60115; *Dr. James H. Monroe,Legal Division, PfizerGenetics,235 E. 42ndSt., N.Y.,N.Y. 10017(212)573-2369

13. CHECK BOX BELOW FOR EACH ATTACHMENT SUBMITTED:

- [X] 13A. Exhibit A, Origin and Breeding History of the Variety *(See Section 52 of the Plant Variety Protection Act.)*
- [X] 13B. Exhibit B, Novelty Statement.
- [X] 13C. Exhibit C, Objective Description of the Variety *(Request form from Plant Variety Protection Office.)*
- [X] 13D. Exhibit D, Additional Description of the Variety.

14a. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? *(See Section 83(a). (If "Yes," answer 14B and 14C below.)* [ ] YES [XX] NO

14b. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? [ ] YES [X] NO

14c. IF "YES," TO 14B, HOW MANY GENERATIONS OF PRODUCTION BEYOND BREEDER SEED? [ ] FOUNDATION [ ] REGISTERED [ ] CERTIFIED

15a. DID THE APPLICANT(S) FILE FOR PROTECTION OF THIS VARIETY IN OTHER COUNTRIES? [ ] YES [X] NO *(If "Yes," give name of countries and dates.)*

15b. HAVE RIGHTS BEEN GRANTED THIS VARIETY IN OTHER COUNTRIES? [ ] YES [X] NO *(If "Yes," give name of countries and dates.)*

~~16. DOES THE APPLICANT(S) AGREE TO THE PUBLICATION OF HIS/HER (THEIR) NAME(S) AND ADDRESS IN THE OFFICIAL JOURNAL? [ ] YES [ ] NO~~

17. The applicant(s) declare(s) that a viable sample of basic seed of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable.

The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Act.

Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

4/19/85
(DATE)

(SIGNATURE OF APPLICANT)
Vice President
DEKALB-PFIZER GENETICS

(DATE)

(SIGNATURE OF APPLICANT)

FORM GR-470 (1-78) NOTE: *Please address all correspondence to Dr. James H. Monroe, N.Y., N.Y.

Exhibit A. Origin and Breeding History of Dent Corn Inbred MBNA

Summer 1976: The cross Mo17-H(187-2 x C103/Ht) x MDA-28(BPA x EOOM Comp) was made at DeKalb, Illinois. Reciprocal crosses were made between the inbred lines. All $S_0$ seed from cross pollinated ears was bulked. (1976 Nursery Book Row Numbers 19,576 x 19,581 and 19,576 x 19,582).

Summer 1977: One seventeen-plant row of the single cross Mo17-H x MDA-28 was grown at DeKalb, Illinois and self pollinated. All $S_1$ seed from self pollinated ears was bulked. (1977 Nursery Book Row Number 20,150).

Winter 1977: $S_1$ seed from the cross Mo17-H x MDA-28 was grown at Homestead, Florida and self pollianted. The $S_1$ generation was represented by a single seventeen-plant row. No selection was made among plants with the row. All $S_2$ seed from self pollinated ears were sent to DeKalb, Illinois where the seed was bulked. (1977 Nursery Book Row Number 5-847).

Summer 1978: $S_2$ seed from the cross Mo17-H x MDA-28 was grown at DeKalb, Illinois and self pollinated. The $S_2$ generation was represented by two thirty-two plant rows. Selection among plants within rows was based on desirable plant and ear characteristics, stalk quality, foliar disease resistance, and European Corn Borer resistance. Three ears were selected from rows 19,405 and 19,406 and shelled individually. (1978 Nursery Book Row Number 19,405 and 19,406).

Summer 1979: $S_3$ seed from the cross Mo17-H x MDA-28 was grown at DeKalb, Illinois and self pollinated. The $S_3$ generation was represented by three thirty-two plant rows planted on an ear-to-row basis. Selection among plants within rows was based on desirable plant and ear characteristics, stalk quality, foliar disease resistance, and European Corn Borer resistance. Two ears were selected from row 21,157 and shelled individually. (1979 Nursery Book Row Number 21,157, 21,158, and 21,159).

Summer 1980: $S_4$ seed from the cross Mo17-H x MDA-28 was grown at DeKalb, Illinois and self pollinated. The $S_4$ generation was represented by two thrity-two plant rows. Selection among plants within rows was based on desirable plant and ear characteristics, stalk quality, foliar disease resistance, and European Corn Borer resistance. A single ear was selected from row 27,192 and assigned the inbred code MBNA. (1980 Nursery Book Row Number 27,191 and 27,192).

Winter 1980: Initiation of seed increase of MBNA.

The initial cross Mo17-H x MDA-28 and subsequent selection in the $S_1$ through the $S_4$ generations and the coding of MBNA was conducted by Dr. John H. Pfund.

Appendium to DPG 8502C, Corn Inbred MBNA, PC 6940

Statement of Stability

Corn inbred MBNA was coded in 1980 and has been reproduced for the past five years by self pollination, during which time inbred MBNA has been judged to phenotypically and genetically stable.

Statement of Uniformity

Corn inbred MBNA is uniform for all traits except the expression of tassel seed in the lower portion of the tassel. Variability for tassel seed expression will range from 0 to 15% depending on the environmental conditions.

John Pfund
Principal Corn Breeder & Area Director

8500127
RECD FEB 22 1985

03310/4/002
DEKALB - PFIZER GENETICS
Applicant

MBNA, Exhibit A, Appendium I.

1025 OAK ST
DEKALB IL 60115

TEST Date FEBRUARY 15, 1985

Test No. 413795 Lot No. 23N998

Kind & Variety (Producers Declaration) MBNA

FOUNDATION EF155 CORN F5,TD.

THIS SAMPLE MEETS CERTIFICATION REQUIREMENTS BASED ON SOURCE OF SEED, FIELD INSPECTION AND LABORATORY ANALYSIS

**GERMINATION REPORT:**

| | | | | | |
|---|---|---|---|---|---|
| Germination | % | | | Cold Test | % |
| Hard Seed | % | Pod & Stem Blight | % | A-A Test | % |
| Dead Seed | % | Other Diseases | % | Tetrazolium | % |

**PURITY REPORT:**

| | | | |
|---|---|---|---|
| Pure Seed | | 99.99 | % |
| Weed Seeds | | .00 | % |
| Other Crop Seeds | | .00 | % |
| Total Inert Matter | | .01 | % |
| Broken Seed | .00 | | % |
| Other Inert | .01 | | % |

Test Weight 59.10 LBS.

Moisture 11.00%

Total Weight of Sample Examined: 500.00

Dockage from 1,000 grams:

| Noxious Weeds | Other Weed Seeds |
|---|---|
| NONE FOUND | NONE FOUND |
| **Other Crop Seeds** | **Inert Matter** |
| NONE FOUND | CHAFF |

REMARKS:

This certifies that the sample of seed submitted of the lot designated above has been analyzed in accordance with the RULES FOR SEED TESTING AS ADOPTED BY THE ASSOCIATION OF OFFICIAL SEED ANALYSTS. VIGOR TESTING INFORMATION CANNOT BE USED FOR LABELING PURPOSES.

**ILLINOIS CROP IMPROVEMENT ASSOCIATION, INC.**
**508 South Broadway, Urbana, Illinois 61801**
**Telephone: 217-367-4053**

Registered Seed Technologist

James R. Shenk
Manager

ORM 3-1084

FEBRUARY 15, 1985

4

8500127 RECD JAN 5 1984

03310/3/002
DEKALB - PFIZER GENETICS
Applicant

MBNA, Exhibit A, Appendium I.

1025 OAK ST
DEKALB IL 60115

TEST Date December 27 , 1983

Test No. 409927 MBNA Lot No. 23N158

Kind & Variety (Producers Declaration)

FOUNDATION ER155 CORN F5

THIS SAMPLE MEETS CERTIFICATION REQUIREMENTS BASED ON SOURCE OF SEED, FIELD INSPECTION AND LABORATORY ANALYSIS

**GERMINATION REPORT: 400 Seeds**

| | | | | | |
|---|---|---|---|---|---|
| Germination | % | Strong | % | Cold Test | % |
| Hard Seed | % | Pod & Stem Blight | % | A-A Test | % |
| Dead Seed | % | Other Diseases | % | Tetrazolium | % |

**PURITY REPORT:**

| | | | | | |
|---|---|---|---|---|---|
| Pure Seed | | 99.75 | % | Test Weight | 60.40 LBS. |
| Weed Seeds | | .00 | % | | |
| Other Crop Seeds | | .00 | % | Moisture | 11.60 % |
| Total Inert Matter | | .25 | % | | |
| Broken Seed | .24 | | % | Total Weight of Sample Examined: | 500.00 |
| Other Inert | .01 | | % | | |

Dockage from 1,000 grams:

| Noxious Weeds | Other Weed Seeds |
|---|---|
| NONE FOUND | NONE FOUND |
| **Other Crop Seeds** | **Inert Matter** |
| NONE FOUND | BROKEN SEED<br>CHAFF |

REMARKS:

This certifies that the sample of seed submitted of the lot designated above has been analyzed in accordance with the RULES FOR SEED TESTING AS ADOPTED BY THE ASSOCIATION OF OFFICIAL SEED ANALYSTS. VIGOR TESTING INFORMATION CANNOT BE USED FOR LABELING PURPOSES.

**ILLINOIS CROP IMPROVEMENT ASSOCIATION, INC.**
**508 South Broadway, Urbana, Illinois 61801**
**Telephone: 217-367-4053**

J. E. Bennett
Registered Seed Technologist

James R. Shenk
Manager

RM 3-0881

RECD FEB 14 1985

5

DECEMBER 28, 1983

MBNA

Exhibit B. Novelty Statement

MBNA is a yellow corn inbred line derived from a single cross Mo17Ht x MDA-28).

The public line that is most similar to MBNA is Mo17Ht. MBNA is statistically different from Mo17Ht in ear height (80 vs. 97), ear diameter (38 vs. 35), ear length (12.6 vs. 18.7) and leaf angle (30.8° vs. 24.7°). (See Exhibit B, Appendium I).

Additional distinguishing differences are; 4676A is significantly early in flowering and the cob diameter of MBNA is significantly larger than Mo17Ht. (See Exhibit B, Appendium II).

MBNA

Exhibit B. Novelty Statement.

Appendium I.

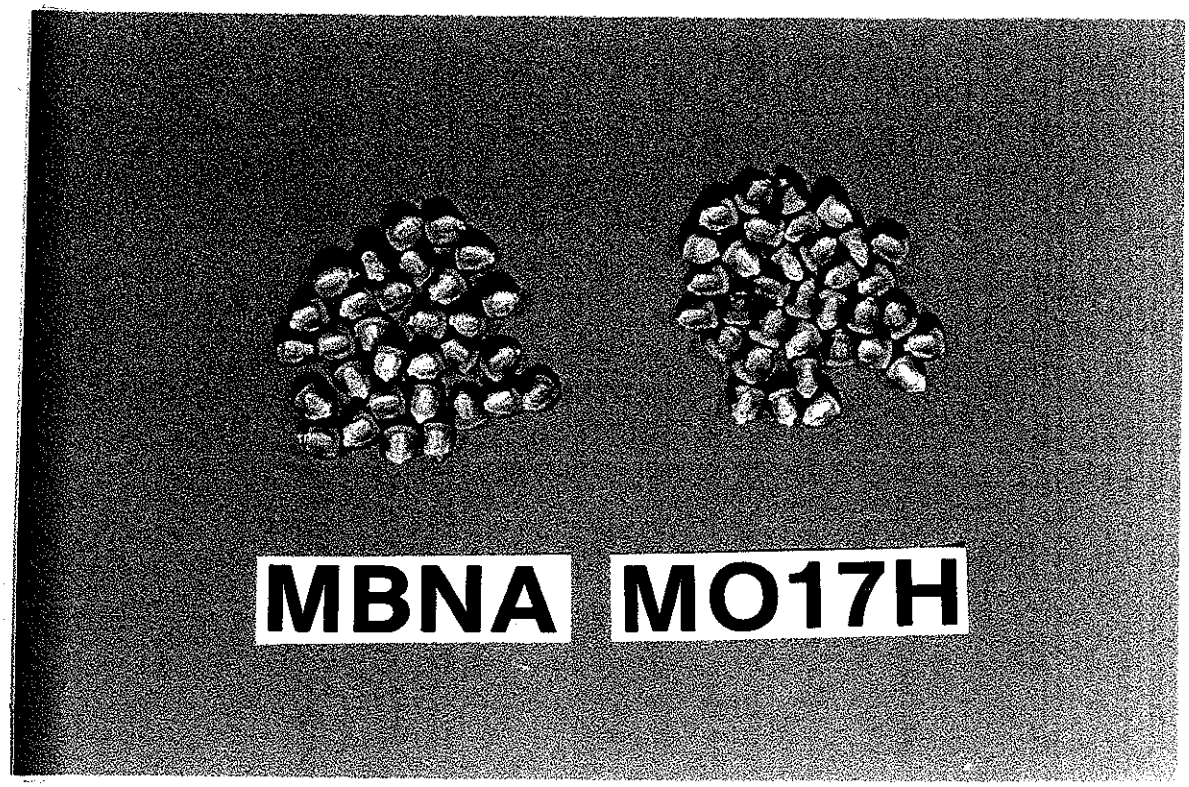
| Plant and ear Characteristics | MBNA | Mo17Ht | Testing Hypothesis $H_o: \mu_1 = \mu_2$ $H_A: \mu_1 \neq \mu_2$ |
|---|---|---|---|
| 1. Ear height (cm) | 80 | 97 | Sig. ($\alpha = 0.1$) |
| 2. Ear diameter(cm) | 38 | 35 | Sig. ($\alpha = 0.1$) |
| 3. Ear length (cm) | 12.6 | 18.7 | Sig. ($\alpha = 0.1$) |
| 4. Ear weight (gm) | 107.0 | 123.7 | Not Sig. ($\alpha = 0.1$) |
| 5. Leaf angle (°) | 30.8 | 24.7 | Sig. ($\alpha = 0.1$) |

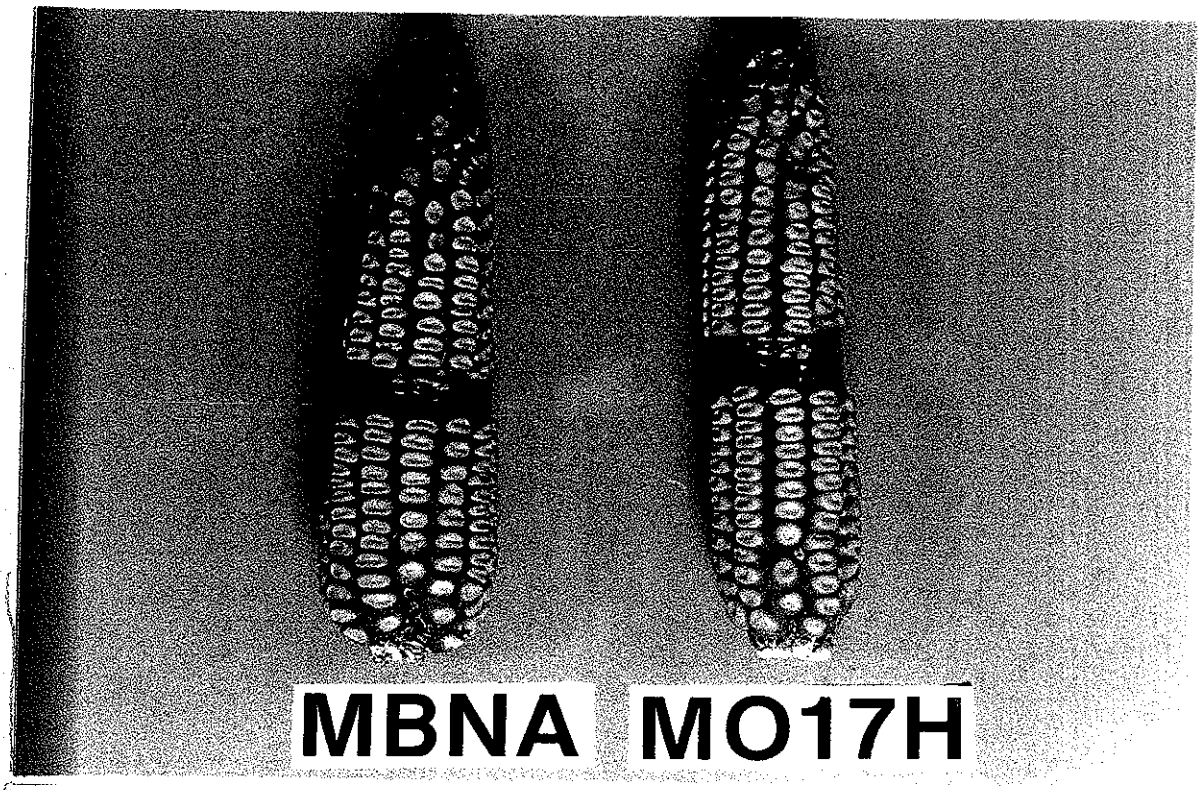
1) $n_1 \neq n_2$

2) Detailed calculations are avilable.

MBNA

13B. Exhibit B. Novelty Statement, Appendium II.




MBNA and Mo17Ht have a dent kernel. The cob color of MBNA and Mo17Ht is red. However, the ear type of Mo17Ht is more slender than MBNA and the cob strength of MBNA is significantly stronger than Mo17Ht.

MBNA

FORM APPROVED. OMB NO. 40-R3712

FORM GR-470-28
(2-15-74)

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
GRAIN DIVISION
HYATTSVILLE, MARYLAND 20782

EXHIBIT C
*(Corn)*

# OBJECTIVE DESCRIPTION OF VARIETY
## CORN *(ZEA MAYS)*

NAME OF APPLICANT(S)

ADDRESS *(Street and No. or R.F.D. No., City, State, and ZIP Code)*

FOR OFFICIAL USE ONLY

PVPO NUMBER 8500127

VARIETY NAME OR TEMPORARY DESIGNATION

MBNA

Place the appropriate number that describes the varietal character of this variety in the boxes below.
Place a zero in first box (e.g. [0][8][9] or [0][9]) when number is either 99 or less or 9 or less.

**1. TYPE:**

[2] 1 = SWEET 2 = DENT 3 = FLINT 4 = FLOUR 5 = POP 6 = ORNAMENTAL

**2. REGION WHERE BEST ADAPTED IN THE U.S.A.:**

[7] 1 = NORTHWEST 2 = NORTHCENTRAL 3 = NORTHEAST 4 = SOUTHEAST
5 = SOUTHCENTRAL 6 = SOUTHWEST 7 = MOST REGIONS

**3. MATURITY (In Region of Best Adaptability):**

*(Under "omments" (pg. 3) state how heat units were calculated)*

| | | |
|---|---|---|
| [8][4] DAYS FROM EMERGENCE TO 50% OF PLANTS IN SILK | [1][4][7][4] | HEAT UNITS |
| [ ][ ] DAYS FROM 50% SILK TO OPTIMUM EDIBLE QUALITY | [ ][ ][ ][ ] | HEAT UNITS |
| [6][6] DAYS FROM 50% SILK TO HARVEST AT 25% KERNEL MOISTURE | [1][2][1][2] | HEAT UNITS |

**4. PLANT:**

[1][8][8] CM. HEIGHT ~~Pro-tassel-tip~~ (to flag leaf)

[0][8][0] CM. EAR HEIGHT (To base of top ear)

[ ][ ] CM. LENGTH OF TOP EAR INTERNODE

**Number of Tillers:**

[1] 1 = NONE 2 = 1–2 3 = 2–3 4 = > 3

**Number of Ears Per Stalk:**

[1] 1 = SINGLE 2 = SLIGHT TWO-EAR TENDENCY
3 = STRONG TWO-EAR TENDENCY 4 = THREE-EAR TENDENCY

**Cytoplasm Type:**

[1] 1 = NORMAL 2 = "T" 3 = "S" 4 = "C" 5 = OTHER (Specify) _____

**5. LEAF (Field Corn Inbred Examples Given):**

**Color:**

[2] 1 = LIGHT GREEN (HY) 2 = MEDIUM GREEN (WF9) 3 = DARK GREEN (B14) 4 = VERY DARK GREEN (K166)

**Angle from Stalk (Upper half):**

[2] 1 = < 30° 2 = 30–60° 3 = > 60°

**Sheath Pubscence:**

[1] 1 = LIGHT (W22) 2 = MEDIUM (WF9)
3 = HEAVY (OH26)

**Marginal Waves:**

[1] 1 = NONE (HY) 2 = FEW (WF9) 3 = MANY (OH7L)

**Longitudinal Creases:**

[1] 1 = ABSENT (OH51) 2 = FEW (OH56A)
3 = MANY (PA11)

**Width:**

[0][9] CM. WIDEST POINT OF EAR NODE LEAF

**Length:**

[ ][ ][ ] CM. EAR NODE LEAF

[1][8] NUMBER OF LEAVES PER MATURE PLANT

**6. TASSEL:**

[1][0] NUMBER OF LATERAL BRANCHES

**Branch Angle from Central Spike:**

[1] 1 = < 30° 2 = 30–40° 3 = > 45°

**Penduncle Length:**

[ ][ ] CM. FROM TOP LEAF TO BASAL BRANCHES

**Pollen Shed:**

[2] 1 = LIGHT (WF9) 2 = MEDIUM 3 = HEAVY(KY21)

[6] **Anther Color:** } 1 = YELLOW 2 = PINK 3 = RED 4 = PURPLE 5 = GREEN
[5] **Glume Color:** } 6 = OTHER (Specify) green-yellow

**Pollen Restoration for Cytoplasms (o = Not Tested, 1 = Partial, 2 = Good)**

[ ] "T" [ ] "S" [ ] "C" [X] OTHER (Specify Cytoplasm and degrees of restoration) not tested

**7. EAR (Husked Ear Data Except When Stated Otherwise):**

[1][3] CM LENGTH [3][8] MM. MID-POINT DIAMETER [1][0][7] GM. WEIGHT

**Kernel Rows:**

[2] 1 = INDISTINCT 2 = DISTINCT [1][2] NUMBER

[2] 1 = STRAIGHT 2 = SLIGHTLY CURVED 3 = SPIRAL

**Silk Color (Exposed at Silking Stage):**

[5] 1 = GREEN 2 = PINK 3 = SALMON 4 = RED 5 = Green-yellow

**Husk Color:**

[1] FRESH } 1 = LIGHT GREEN 2 = DARK GREEN 3 = PINK
[6] DRY } 4 = RED 5 = PURPLE 6 = BUFF

**Husk Extention: (Harvest Stage)**

[2] 1 = SHORT (Ears Exposed) 2 = MEDIUM (Barely Covering Ear)
3 = LONG (8–10CM Beyond Ear Tip)
4 = VERY LONG (> 10 CM)

**Husk Leaf:**

[1] 1 = SHORT ( < 8 CM) 2 = MEDIUM (8–15 CM)
3 = LONG ( > 15 CM)

**Shank:**

[0][7] CM LONG [ ] NO. OF INTERNODES

**Position at Dry Husk Stage:**

[ ] 1 = UPRIGHT 2 = HORIZONTAL 3 = PENDENT

**Taper:**

[1] 1 = SLIGHT 2 = AVERAGE 3 = EXTREME

**Drying Time (Unhusked Ear):**

[ ] 1 = SLOW 2 = AVERAGE 3 = FAST

**8. KERNEL (Dried):**

**Size (From Ear Mid-Point):**

[0][9] MM LONG [0][9] MM. WIDE [0][5] MM. THICK

**Shape Grade (% Rounds)**

[5] 1 = < 20 2 = 20–40 3 = 40–60 4 = 60–80 5 = > 80

**8. KERNEL (Dried) :**

[1] **Pericarp Color:** 1 = COLORLESS 2 = RED-WHITE 3 = TAN 4 = BRONZE 5 = BROWN 6 = LIGHT RED 7 = CHERRY RED 8 = VARIEGATED (Describe) _____

[1] **Aleurone Color:** 1 = HOMOZYGOUS 2 = SEGREGATING (Describe) _____

[1] 1 = WHITE 2 = PINK 3 = TAN 4 = BROWN 5 = BRONZE 6 = RED 7 = PURPLE 8 = PALE PURPLE 9 = VARIEGATED (Describe) _____

[3] and [5] **Endosperm Color:** 1 = WHITE 2 = PALE YELLOW 3 = YELLOW 4 = PINK-ORANGE 5 = WHITE CAP.

**Endosperm Type:**

[3] 1 = SWEET (su1) 2 = EXTRA SWEET (sh2) 3 = NORMAL STARCH 4 = HIGH AMYLOSE STARCH 5 = WAXY STARCH 6 = HIGH PROTEIN 7 = HIGH LYSINE 8 = OTHER (Specify) _____

[2][7] GM. WEIGHT /100 SEEDS (Unsized Sample)

**9. COB:**

[2][5] MM. DIAMETER AT MID-POINT

**Strength:**

[2] 1 = WEAK 2 = STRONG

**Color:**

[2] 1 = WHITE 2 = PINK 3 = RED 4 = BROWN 5 = VARIEGATED 6 OTHER (Specify) _____

**10. DISEASE RESISTANCE (0 = Not Tested, 1 = Susceptible, 2 = Resistant):**

| | | | | | |
|---|---|---|---|---|---|
| [0] | STALK ROT (Diplodia) | [0] | STALK ROT (Fusarium) | [0] | STALK ROT (Gibberella) |
| [2] | NORTHERN LEAF BLIGHT | [2] | SOUTHERN LEAF BLIGHT | [0] | SMUT |
| [0] | SOUTHERN RUST | [0] | CORN SMUT | [0] | BACTERIAL WILT |
| [0] | BACTERIAL LEAF BLIGHT | [0] | MAIZE DWARF MOSAIC | [0] | STUNT |
| [ ] | OTHER (Specify) Anthracnose (foliar phase)-2; Eyespot-2 | | | | |

**11. INSECT RESISTANCT (0 = Not Tested, 1 = Susceptible, 2 = Resistant):**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| [1] | CORNBORER | [0] | EARWORM | [0] | SAPBEETLE | [0] | APHID |
| [0] | ROOTWORM (Northern) | [0] | ROOTWORM (Western) | | | | |
| [0] | ROOTWORM (Southern) | [0] | OTHER (Specify) _____ | | | | |

**12. VARIETIES MOST CLOSELY RESEMBLING THAT SUBMITTED FOR THE CHARACTERS GIVEN:**

| CHARACTER | VARIETY | CHARACTER | VARIETY |
|---|---|---|---|
| Maturity | Mo17Ht | Kernel Type | |
| Plant Type | Mo17Ht | Quality (Edible) | |
| Ear Type | | Usage | |

**REFERENCES:**


U.S. Department Agriculture. Yearbook 1937.

Corn: Culture, Processing, Products. 1970 Avi Publishing Company, Westport, Connecticut. (Numerous (Authors)

Emerson, R.A., G.W. Beadle, and A.C. Fraser. A Summary of Linkage Studies in Maize.Cornell A.E.S., Mem. 180. 1935.

The Mutants of Maize. 1968. Crop Science Society of America. Madison, Wisconsin.

Stringfield, G.H. Maize Inbred Lines of Ohio. Ohio A.E.S. Bul. 831. 1959.

Butler, D.R. 1954 — A System for the Classification of Corn Inbred Lines — PhD. Thesis, Ohio State University.


**COMMENTS:** Heat Unit Calculations:

$$GDD = \frac{\text{Daily max. temp.}(\leq 86°F) + \text{Daily min. temp.}(\geq 50°F)}{2} - 50°F$$

Exhibit D.

Additional Description of the Variety.
Appendium I.

Isozyme Analysis of MBNA vs. Mo17Ht

| LOCUS | Alleles Present | |
|---|---|---|
| | MBNA | Mo17Ht |
| # of plants assayed | 6 | 6 |
| ACPH | 2 | 2 |
| ADH | 4 | 4 |
| Cat | 9 | 9 |
| EP | 6 | 6 |
| GOY U | 4 | 4 |
| GOT M | 4 | 4 |
| GOT L | 4 | 4 |
| B-Glu | 6 | 6 |
| IDH A | 4 | 4 |
| IDH B | 6 | 4 |
| MDH A | 6* | 6* |
| MDH B | 6 | 6 |
| MDH C | 16 | 16 |
| MDH D | 12 | 12 |
| MDH E | 12 | 12 |
| PGM A | 9 | 9 |
| PGM B | 3 | 8 |
| PHI | 4 | 4 |

* Allele is probably 6 but null cannot be ruled out.

The technique of using isozymes for genotyping or "fingerprinting" is described by the following reference:

Goodman, M. M. and C. W. Stuber. 1980
Genetic identification of lines and crosses using isoenzyme electrophoresis. Proceedings of the Thirty-fifth Annual Corn and Sorghum Industry Research Conference.

Exhibit D.
Additional Description of the Variety.

The isozyme analysis of MBNA and Mo17Ht shows genetic differences a two different loci: IDHB - 6 vs. 4 and PGMB - 3 vs. 8.
(See Exhibit D, Appendium I)

8500127

April 26, 1985

EXHIBIT E

Plant Variety Protection Office
United States Department of
Agriculture
AMS-USDA
Room 500 -- National Agricultural
Library Building
Beltsville, Maryland 20705

Re: Plant Variety Protection Certificate Application
Hybrid Inbred Corn Line MBNA -- DPG 8502C - DPC 6940

Dear Sirs:

Dr. John H. Pfund, breeder of corn line MBNA, was from 1975 through July 14, 1982, a full-time employee of Pfizer Genetics, Inc. DeKalb Pfizer Genetics, a general partnership between DeKalb AgResearch, Inc. and Pfizer Genetics, Inc., succeeded on July 15, 1982, to substantially all of the assets of Pfizer Genetics, Inc., including all of the rights to MBNA. From July 15, 1982, to the present, Dr. Pfund has been a full-time employee of DeKalb Pfizer Genetics.

Very truly yours,

James H. Monroe

JHM:aa

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